

(1)
DRAFT FILE (JIP)

DEPARTMENT OF THE NAVY
JUSTIFICATION OF ESTIMATES
AMENDED FY 1988/1989 BIENNIAL BUDGET



DTIC
SELECTED
S JUL 28 1988
& D

SUBMITTED TO CONGRESS FEBRUARY 1988

PROCUREMENT

DISTRIBUTION STATEMENT A
Approved for public release
Distribution Unlimited

WEAPONS PROCUREMENT, NAVY

AD-A195 769

DEPARTMENT OF THE NAVY
WEAPONS PROCUREMENT, NAVY

JUSTIFICATION OF ESTIMATES FOR FISCAL YEAR 1988 AND 1989

TABLE OF CONTENTS

	<u>Page No.</u>
Budget Appendix Extract	1
Summary of Requirements	11
Activity 1 - Ballistic Missiles	12
Activity 2 - Other Missiles	16
Activity 3 - Torpedoes and Related Equipment	31
Activity 4 - Other Weapons	38
Activity 5 - Spares and Repair Parts	43
Comparison of Program Requirements and Financing	45



Accession For	✓		
NTIS	CRA&I	DTIC TAB	Unannounced
Justification:			
By <u>John J. Donahue</u>			
Distribution /			
Availability Codes			
Dist	Avail and/or Special		
A-1			

This document contains Statistical data

WEAPONS PROCUREMENT, NAVY

probabilistic and other)

For construction, procurement, production, modification, and modernization of missiles, torpedoes, other weapons, and related support equipment including spare parts, and accessories therefor; expansion of public and private plants, including the land necessary therefor, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title; and procurement and installation of equipment, appliances, and machine tools in public and private plants; reserve plant and Government and contractor-owned equipment layaway, as follows:

Seasidem, \$181,000; Trident I, \$6,986,000; Trident II, \$2,041,331,000; Support equipment and facilities, \$194,000; Tomahawk, \$847,336,000; AIM/RIM-7 F/M Sparrow, \$79,000,000; AIM-9L/N Sidewinder, \$25,833,000; AIM-54 A/C Phoenix, \$343,596,000; AGM-84A Harpoon, \$142,660,000; AGM-88A HARM, \$187,128,000; SM-2 MR, \$583,098,000; RAM, \$44,931,000; Stinger, \$17,765,000; Sidearm, \$25,381,000; Hellfire, \$44,154,000; Laser Maverick, \$263,200,000; IIR Maverick, \$60,000,000; Penguin, \$3,455,000; Aerial Targets, \$104,104,000; Drones and Decoys, \$24,767,000; Other missile support, \$19,157,000; Modification of missiles, \$15,513,000; Support equipment and facilities, \$152,407,000; Ordnance support equipment, \$218,436,000; MK-48 ADCAP torpedo program, \$243,444,000; MK-50 advance lightweight torpedo program, \$108,402,000; MK-30 mobile target program, \$31,495,000; Anti submarine rocket (ASROC) program, \$9,522,000; Modification of torpedoes, \$42,190,000; Torpedo support equipment program, \$53,986,000; MK-15 close-in weapons system program, \$28,023,000; 25mm gun mount, \$4,091,000; Small arms and weapons, \$9,568,000; Modification of guns and gun mounts, \$57,589,000; Guns and gun mounts support equipment program, \$1,068,000; Spares and repair parts, \$127,028,000; In all: \$5,967,019,000] \$6,271,800,000, of which \$4,000,000 shall be available only for the Navy Reserve and the Marine Corps Reserve, to remain available for obligation until September 30, 1990: Provided, That none of the funds provided herein may be used for a multiyear procurement contract of the Harpoon missile system: Provided further, That with regard to programs, projects and activities funded by this appropriation, provisions of the National Defense Authorization Act for fiscal years 1988 and 1989 (Public Law 100-180) which provide that funds appropriated pursuant to such Act shall be available only for specific programs, projects and activities in specific dollar amounts shall be effective, except as follows: Trident II missile, \$2,041,331,000.] 1991. (10 U.S.C. 5013, 5063; Department of Defense Appropriation Act, 1988, as included in Public Laws 100-202; additional authorizing legislation to be proposed.)

Navy

Weapons Procurement, Navy
Program and Financing (In Thousands of dollars) SUMMARY

		Budget Plan (Accounts for PROCUREMENT actions programmed)			Obligations		
		1987 actual	1988 est.	1987 actual	1988 est.	1989 est.	1989 est.
Identification code 17-1907-0-1-051							
Program by activities:							
Direct program:							
00. 0101 Ballistic missiles	1,354,573	2,048,692	1,872,538	1,350,719	1,413,924	1,735,082	
00. 0201 Other missiles	2,730,160	3,085,621	3,504,356	3,069,007	3,104,735	3,087,419	
00. 0301 Torpedoes and related equipment	871,178	469,039	699,054	601,802	737,899	702,879	
00. 0401 Other weapons	174,221	100,339	108,440	283,300	90,064	98,541	
00. 0501 Spares and repair parts	136,172	110,928	87,412	150,264	136,586	103,485	
00. 9101 Total direct program	4,968,304	6,834,819	6,271,800	5,455,092	5,483,198	5,727,486	
01. 0101 Reimbursable program	30,444	63,230	157,986	7,934	95,783	157,988	
10. 0001 Total	4,998,748	6,897,849	6,429,786	5,463,026	5,578,981	5,885,474	
Financing:							
Offsetting collections from:							
11. 0001 Federal funds(-)	-3,588	-29,870	-30,766	-3,143	-29,870	-30,766	
13. 0001 Trust funds(-)	-26,856	-33,360	-127,222	-27,313	-33,360	-127,222	
14. 0001 Non-Federal sources(-)				30			
17. 0001 Recovery of prior year obligations				-45,602			
Unobligated balance available, start of year:							
21. 4002 For completion of prior year budget plans	-274,700	-459,400	-2,171,379	-1,446,688	-1,765,556		
21. 4003 Available to finance new budget plans	-305,897	70,400	-274,700	-459,400			
21. 4007 Reprogramming from/to prior year budget plan	133,423		133,423				
22. 4001 Unobligated balance transferred to other acc							
24. 4002 For completion of prior year budget plans	459,400		1,446,688	1,765,556	2,309,870		
24. 4003 Available to finance subsequent year budget	10,774		459,400				
25. 0001 Unobligated balance lapsing			10,774				
39. 0001 Budget authority	4,991,204	5,445,619	6,271,800	5,491,204	5,445,619	5,271,800	
Budget authority:							
40. 0001 Appropriation	5,290,847	5,987,019	6,271,800	5,290,847	5,987,019	6,271,800	
40. 0017 Appropriation rescinded	-244,860	-389,000	-244,860	-389,000	-389,000	-389,000	
41. 0001 Transferred to other accounts(-)	-55,043	-132,400	-55,043	-132,400	-132,400	-132,400	
43. 0001 Appropriation (adjusted)	4,991,204	5,445,619	6,271,800	4,991,204	5,445,619	5,271,800	
Relation of obligations to outlays:							
71. 0001 Obligations incurred, net				5,432,600	5,515,751	5,727,486	
72. 4001 Obligated balance, start of year				6,136,382	7,593,924	8,042,875	
74. 4001 Obligated balance, end of year				-7,593,924	-8,842,875	-9,734,061	
77. 0001 Adjustments in expired accounts				16,894			
78. 0001 Adjustments in unexpired accounts				-45,602			

NAVY

Weapons Procurement, Navy
Program and Financing (in Thousands of dollars) SUMMARY

		1987 actual	1988 est.	1989 est.
Identification code	17-1607-0-1-051			
\$0.0001	Outlays	3,946,360	4,266,800	4,826,300

Weapons Procurement, Navy
Object Classification (in thousands of dollars) SUMMARY

	Identification code	17-1507-0-1-051	1987 actual	1988 est.	1989 est.
	Direct obligations:				
	Other services:				
125.003	Contracts	163.692	165.376	168.600	
126.001	Supplies and materials	284.815	675.335	426.073	
131.001	Equipment	5.016.785	4.642.487	5.102.813	
199.901	Total Direct obligations	5,355.092	5,463.198	5,727.486	
	Reimbursable obligations:				
	226.001 Supplies and materials	7.934	95.783	167.988	
299.001	Total Reimbursable obligations	7.934	95.783	167.988	
999.901	Total obligations	5,463.026	5,570.961	5,895.474	

Navy

Weapons Procurement, Navy
Program and Financing (in Thousands of dollars) FISCAL YEAR 1983

Identification code	17-1507-0-1-051	Budget Plan (Amounts for PROCUREMENT actions programmed)			Obligations		
		1987 actual	1988 est.	1989 est.	1987 actual	1988 est.	1989 est.
Financing:							
17.0001	Recovery of prior year obligations				-39,900		
	Unobligated balance available, start of year:						
21.4007	Reprogramming from/to prior year budget plan	-39,900					
22.4001	Unobligated balance transferred to other acc	39,900					
39.0001	Budget authority						

۲۷۸

**Weapons Procurement, Navy
Program and Financing (in Thousands of dollars)**

Navy

Program and Financing (in thousands of dollars) FISCAL YEAR 1986

Identification code	17-1507-0-1-051	Budget Plan (amounts for PROCUREMENT actions programmed)			Obligations			
		1987 actual	1988 est.	1987 actual	1988 est.	1989 est.		
Program by activities:								
Direct program:								
00.0101	Ballistic missiles			90,683		9,430		
00.0201	Other missiles			487,686		137,757		
00.0301	Torpedoes and related equipment			249,581		269,558		
00.0401	Other weapons			68,628		9,375		
00.0501	Spares and repair parts			43,740		16,712		
00.9101	Total direct program			960,318		442,832		
01.0101	Reimbursable program			597		9,446		
10.0001	Total			960,915		452,278		
Financing:								
Offsetting collections from:								
11.0001	Federal funds(-)			346				
13.0001	Trust funds(-)			-1,066				
14.0001	Non-Federal sources(-)			30				
17.0001	Recovery of prior year obligations			-4,141				
Unobligated balance available, start of year:								
21.4002	For completion of prior year budget plans			-1,600,262		-452,278		
21.4003	Available to finance new budget plans	-215,200	-191,900	-215,200	-191,900			
21.4007	Reprogramming from/to prior year budget plan	-191,900						
22.4001	Unobligated balance transferred to other acc	30,100	30,700	30,100	30,700			
24.4002	Unobligated balance available, end of year:			452,278				
24.4003	For completion of prior year budget plans	191,900		191,900				
24.4003	Available to finance subsequent year budget							
40.0017	Budget authority (Appropriation rescinded)	-185,100	-161,200	-185,100	-161,200			

Weapons Procurement, Navy
Program and Financing (in thousands of dollars) FISCAL YEAR 1987

		Budget Plan (amounts for PROCUREMENT actions programmed)		Utilizations	
		1987 actual	1988 est.	1987 actual	1988 est.
Identification code	17-1507-0-1-051				
Program by activities:					
Direct program:					
Ballistic missiles	1,354,673		1,233,556	55,355	65,662
Other missiles	2,730,160		2,217,942	308,072	124,146
Torpedoes and related equipment	571,178		285,057	145,564	140,557
Other weapons	174,221		153,922	14,455	5,944
Spares and repair parts	138,172		106,524	17,765	13,863
Total direct program	4,968,304		3,997,001	621,231	350,072
00.0101 Reimbursable program	30,444		7,337	23,107	
10.0001 Total	4,998,748		4,004,338	644,338	350,072
Financing:					
Offsetting collections from:					
Federal funds(-)	-3,568		-3,568		
Trust funds(-)	-26,056		-26,056		
13.0001 Unobligated balance available, start of year:	-26,056				
21.4002 For completion of prior year budget plans					
21.4003 Available to finance new budget plans	-267,500		-267,500		-350,072
22.4001 Unobligated balance transferred to other acc	39,700		39,700		39,700
24.4002 Unobligated balance available, end of year:					
24.4003 Available to finance subsequent year budget plans	267,500		267,500		350,072
39.0001 Budget authority	5,235,804	-227,800	5,235,804	-227,800	
Budget authority:					
40.0001 Appropriation	5,290,847		5,290,847		
40.0017 Appropriation rescinded	-227,800		-227,800		
41.0001 Transferred to other accounts(-)	-65,043		-65,043		
43.0001 Appropriation (adjusted)	5,235,804	-227,800	5,235,804	-227,800	

Navy

Weapons Procurement, Navy
Program and Financing (in Thousands of dollars) FISCAL YEAR 1988

Identification code	17-1507-0-1-061	Budget Plan (amounts for PROCUREMENT actions programmed)		Obligations		
		1987 actual	1988 est.	1987 actual	1988 est.	
Program by activities:						
Direct program:						
00.0101	Ballistic missiles	2,048,692		1,349,139	433,225	
00.0201	Other missiles	3,085,621		2,578,906	82,843	
00.0301	Torpedoes and related equipment	489,030		322,777	102,686	
00.0401	Other weapons	100,338		66,724	21,071	
00.0501	Spares and repair parts	110,928		102,089	8,839	
00.9101	Total direct program					
		5,834,619		4,419,135	648,763	
01.0101	Reimbursable program			63,230	63,230	
10.0001	Total			5,897,849	648,763	
Financing:						
Offsetting collections from:						
11.0001	Federal funds(-)	-29,870		-29,870		
13.0001	Trust funds(-)	-33,360		-33,360		
21.4002	Unobligated balance available, start of year;					
	For completion of prior year budget plans					
24.4002	Unobligated balance available, end of year;					
	For completion of prior year budget plans					
39.0001	Budget authority	5,834,619		5,834,619		
40.0001	Budget authority:					
	Appropriation	6,867,010		5,967,010		
41.0001	Transferred to other accounts(-)	-132,400		-132,400		
43.0001	Appropriation (adjusted)	5,834,610		5,834,610		

Navy

**Weapons Procurement, Navy
Program and Financing (In Thousands of dollars) FISCAL YEAR 1989**

Identification code	17-1607-0-1-051	Budget Plan (Amounts for PROCUREMENT actions programmed)			Obligations		
		1987 actual	1988 est.	1987 actual	1988 est.	1989 est.	
Program by activities:							
Direct program:							
00.0101	Ballistic missiles	1,872,538		1,236,195			
00.0201	Other missiles	3,504,356		2,880,330			
00.0301	Torpedoes and related equipment	699,054		459,737			
00.0401	Other weapons	108,440		71,626			
00.0501	Spares and repair parts	87,412		80,783			
00.9101	Total direct program		6,271,800		4,726,651		
01.0101	Relievable program		157,988		157,988		
10.0001	Total		6,429,788		4,886,639		
Financing:							
Offsetting collections from:							
11.0001	Federal funds(-)	-30,766		-30,766			
13.0001	Trust funds(-)	-127,222		-127,222			
24.4002	Unobligated balance available, end of year: For completion of prior year budget plans			1,549,149			
40.0001	Budget Authority (Appropriation)		6,271,800		6,271,800		

Summary of Requirements
(In Thousands of Dollars)

	<u>FY 1987 Actual</u>	<u>FY 1988 Estimate</u>	<u>FY 1989 Amended Estimate</u>
Ballistic Missiles	1,354,573	2,048,692	1,872,538
Other Missiles	2,730,160	3,085,621	3,504,356
Torpedoes and Related Equipment	571,178	489,039	699,054
Other Weapons	174,221	100,339	108,440
Spares and Repair Parts	138,172	110,928	87,412
TOTAL DIRECT PROGRAM	4,968,304	5,834,619	6,271,800
Reimbursable Program	30,444	63,230	157,988
TOTAL PROGRAM REQUIREMENTS	4,998,748	5,897,849	6,429,788

BUDGET ACTIVITY 1: BALLISTIC MISSILES**(\$ in Thousands)**

FY 1989 Amended Estimate	- \$ 1,872,538
FY 1989 Change	- \$ -364,935
FY 1989 Initial Estimate	- \$ 2,237,473
FY 1988 Estimate	- \$ 2,048,692
FY 1987 Actual	- \$ 1,354,573

Purpose and Scope of Work

Funds budgeted under this activity finance the procurement of fleet ballistic missiles, ancillary checkout and test equipment, missile modifications, and support equipment and facilities required to outfit and support the submarines assigned to the sea-based strategic deterrent forces.

Justification of Funds

The following paragraphs provide justification for the FY 1989 request for ballistic missiles. Initial spare parts amounts are included for information under each missile but are budgeted separately in the spares and repair parts category of the Budget Activity 5 justification.

BALLISTIC MISSILES:**(\$ in Thousands)**

FY 1989 Amended Estimate	- \$ 1,869,900
FY 1989 Change	- \$ -364,949
FY 1989 Initial Estimate	- \$ 2,234,849
FY 1988 Estimate	- \$ 2,048,498
FY 1987 Actual	- \$ 1,350,816

The amended FY 1989 request includes continuing procurement support for the Poseidon and Trident I C-4 missile, and for the Trident II D-5 missile, including advance procurement requirements, as noted below.

Poseidon Missile

(\$ in thousands)			
	FY 1988	FY 1989	
Procurement Cost	Qty	Amount	Qty
	\$ 181	\$ 188	

POSEIDON missiles are no longer being procured; however, funding is required to support missile flight tests which will continue throughout the operational life of the weapon system. This testing is necessary to evaluate the readiness of deployed missiles in accordance with Joint Chiefs of Staff test criteria. The FY 1989 funding request will procure MK-3 reentry system components whose limited operational life requires their periodic replacement by the Department of Energy under the Limited Life Component Exchange Program.

Trident I C-4 Missile

(\$ in thousands)			
	FY 1988	FY 1989	
Procurement Cost	Qty	Amount	Qty
	\$ 6,986	\$ 4,103	

The TRIDENT missile is to provide an undersea missile system in order to ensure that the U.S continues to maintain a credible deterrent independent of foreseeable threats in the 1990's and beyond. To accomplish this mission, the TRIDENT I missile was developed to support two separate systems. The TRIDENT I system is comprised of Continental United States based nuclear powered submarines equipped with long range TRIDENT I strategic missiles and associated direct support shore facilities. The TRIDENT I Backfit system provides TRIDENT I missiles for backfit into existing POSEIDON submarines, thereby providing these submarines a greater range of patrol in order to insure their survivability in the event of unforeseeable enemy breakthroughs in ASW capabilities.

The FY 1989 TRIDENT missile request for \$4.1 million will provide for procurements essential to the continued support of MK-5 guidance and MK-4 reentry systems.

Trident II D-5 Missile

(\$ in thousands)			
	Qty FY 1988	Qty FY 1989	Amount FY 1988
Procurement	.66	.66	\$1,629.525
Advance Procurement		320,131	236,084
Initial Spares		5,684	7,854
Procurement Cost	66	66	\$1,873,463

Trident II D-5 Missile

The TRIDENT II missile will be carried on TRIDENT fleet Ballistic Missile submarines, ensuring that the United States will continue to maintain a highly survivable strategic deterrent for the 1990's and beyond. Deployment of the TRIDENT II missile will (1) enhance Fleet Ballistic Missile submarine survivability by increasing sea launched ballistic missile range at full payload to exploit the total patrol area available to the TRIDENT submarines, (2) minimize total weapon system costs by increasing sea launched ballistic missile payload to the level permitted by the size of the TRIDENT submarine launch tube, thereby allowing mission capability to be achieved with a lesser number of submarines, (3) balance the Triad by adding efficient hard target kill capability to the sea launched ballistic missile, and (4) enhance essential equivalence with the Soviets in accordance with perceived needs to increase our warhead inventory, throw weight, and accuracy in the presence of increasing Soviet capabilities and force levels.

Funding in this line is required to support the procurement of an all new TRIDENT II missile, initial production of which commenced in FY 1987 and to which the following key program milestones apply:

- o Equipment procurements in FY 1986 through FY 1989 based on leadtime away requirements
- o SWFLANT installation, test, checkout and equipment/facility integration began in FY 1987
- o Start PEM missile processing at Strategic Weapons Facility, Atlantic (SWFLANT) - July 1988
- o First Performance Evaluation Missile (PEM) flight test - March 1989
- o TRIDENT II missile Initial Operational Capability (IOC) - December 1989

The FY 1989 funding request of \$1,629.5 million will support production of an additional 66 TRIDENT II missiles; production of associated guidance and flight test instrumentation systems; procurement of MK-4 and MK-5 reentry systems.

Advance Procurement

The FY 1989 request of \$236.1 million will provide for procurement of both long lead and production continuity items required to support the manufacture in future years of TRIDENT II missiles, MK-6 guidance systems, and special purpose instrumentation used in the TRIDENT II flight test program. Total advance procurement requirements comprise two major subsets of commodity acquisition: traditional, or long lead, advance procurement, which includes those items having longer manufacturing leadtimes than the using D-5 end items; and production continuity advance procurement, which entails the purpose of certain critical components earlier than leadtime alone would dictate in order to ensure their continuous production. These latter production continuity procurements encompass a broad range of components and materials which must be produced at minimum, uninterrupted rates on dedicated production lines, as well as life-of-type or one-time quantity buys of items required to support the total planned program.

SUPPORT EQUIPMENT AND FACILITIES:

(\$ in thousands)

FY 1989 Amended Estimate	\$ 2,638
FY 1989 Change	- \$ +14
FY 1989 Initial Estimate	\$ 2,624
FY 1988 Estimate	- \$ 194
FY 1987 Actual	- \$ 3,665

The amended FY 1989 request includes continuing procurement support for capital maintenance projects at government-owned missile industrial facilities.

Missile Industrial Facilities

Procurement Cost	(\$ in thousands)		
	<u>FY 1988</u>	<u>FY 1989</u>	<u>Amount</u>
	<u>Qty</u>	<u>Amount</u>	<u>Qty</u>
	\$ 194		\$ 2,638

Funding for missile industrial facilities provides for capital maintenance projects at Navy-owned Naval Industrial Reserve Ordnance Plants (NIROPS) at Sunnyvale and Santa Cruz, California, and Bacchus, Utah, in support of the Fleet Ballistic Missile program.

Projects planned in FY 1989 include additions and modifications to, and rehabilitation of, non-serviceable equipment and real property. The projects include: converting street lights to low pressure sodium, refurbishing fume ducts and vent fans, refurbishing fire sprinkler systems, and repairing and replacing perimeter fencing.

ACTIVITY 2: OTHER MISSILES

(\$ in Thousands)

FY 1989	Amended Estimate	\$ 3,504,356
FY 1989	Change	- \$ -893,365
FY 1989	Initial Estimate	\$ 4,397,721
FY 1988	Estimate	- \$ 3,085,621
FY 1987	Actual	- \$ 2,730,160

Purpose and Scope of Work

Funds budgeted under this activity finance the procurement and modification of strategic and tactical guided missiles, and aerial targets. In addition, funds provide for weapons industrial facilities and for the support of satellites, launches, and associated equipment for the Fleet Satellite Communications program.

Guided missiles are procured for operational inventory requirements to meet combat sustainability objectives, combat usage, quality assurance testing, and training purposes. Aerial targets are required to support training programs and to permit evaluation of missile performance. Procurement funds provide for (1) the components that comprise the end-items, such as guidance, control, motors, warheads, and fuzes, (2) effort and hardware associated with the production and assembly of these items, such as production engineering, production proofing, tools and test equipment, and (3) special handling and test equipment, training materials and other specialized items required for operational fleet support of the item.

Justification of Funds

The following paragraphs provide justification for the Other Missiles procurement programs. Initial spare parts amounts are included for information under each missile but are budgeted in the spares and repair parts category of the Budget Activity 5.

STRATEGIC & TACTICAL MISSILES:

(\$ in Thousands)

FY 1989 Amended Estimate	\$ 2,854,319
FY 1989 Change	- \$ -695,059
FY 1989 Initial Estimate	- \$ 3,549,378
FY 1988 Estimate	- \$ 2,699,265
FY 1987 Actual	- \$ 2,569,069

Funds budgeted under this category finance the procurement of air-, surface-, and submarine-launched missiles, other missile support, aerial targets, and drones and decoys.

BGM-109 TOMAHAWK Cruise Missile

	(\$ in Thousands)	
	FY 1988	FY 1989
	Qty	Amount
Procurement	475	\$775,936
Advance Procurement		71,400
Initial Spares		21,574
Procurement Cost		\$868,910

The TOMAHAWK Cruise Missile provides an attack capability against targets at sea (anti-ship Tomahawk) and on land (land-attack Tomahawk). TOMAHAWK is capable of being launched from aircraft, ships, submarines, and ground launchers. The cruise missile can be fitted with either a conventional high explosive or nuclear warhead, and is propelled in flight by a small turbofan engine. The FY 1989 request of \$711.1 million, which includes \$75.6 million of advance procurement for FY 1990, will procure 75 anti-ship and 435 land attack missiles. The TOMAHAWK missile is designed to be deployed in submarines and surface ships in a variety of launchers. This missile is competitively procured from General Dynamics and McDonnell Douglas.

The amended FY 1989 request includes continuing procurement for the TOMAHAWK cruise missile. The FY 1989 program pricing assumes availability of Ground Launched Cruise Missile assets from the Air Force inventory which should be declared excess material once the Intermediate Range Nuclear Forces Reduction Treaty is ratified by the Congress.

SPARROW Missile

	(\$ in Thousands)	
	FY 1988	FY 1989
	Qty	Amount
Procurement	600	\$79,000
Initial Spares		
Procurement Cost	600	\$79,000

SPARROW is both a supersonic, all-weather, all-aspect-capable, air-to-air missile employed by F-4, F-14, F-15 and F-18 aircraft against high performance aircraft and a surface-to-air missile employed with the NATO SEASPARROW system on various naval vessels. The monopulse seeker (AIM/RIM-7M) which has improved electronic countermeasures, fuzing and look down/clutter capability, was introduced into the FY 1980 procurement. The RIM-7M for surface launch will eventually replace both the RIM-7E and RIM-7H. Initial procurement of 80 RIM-7H's was in FY 1981. The FY 1988 program of \$79.0 million provides for the procurement of 400 AIM-7M and 200 RIM-7H missiles. The FY 1988 AIM/RIM-7M missiles will be competitively procured from Raytheon and General Dynamics. The FY 1988 procurement of 600 missiles will be the final procurement. The successor to the SPARROW missile is the AMRAAM missile, which will begin initial procurement in FY 1989.

AMRAAM Missile

	(\$ in Thousands)	
	FY 1988	FY 1989
	Qty	Amount
Procurement		
Initial Spares		
Procurement Cost	50	\$ 59,798

The AMRAAM (Advanced Medium Range Air-to-Air Missile) missile is the successor to the SPARROW missile being procured by both the Air Force and the Navy. The Air Force serves as executive service. The missile will provide an all-weather, all-aspect, beyond-visual-range, air-to-air missile compatible with the F-14, F-15, F-16, F/A-18, and A-6E Upgrade aircraft. The AMRAAM missile will enhance Navy war-fighting capability in the 1990's and beyond through significant improvements in operational utility and combat effectiveness. The \$59.8 million requested in FY 1989 will provide for the initial Navy procurement of 50 AMRAAM missiles.

AIM-9L/M SIDEWINDER Missile

(\$ in Thousands)			
	FY 1988	FY 1989	
	Qty	Qty	Amount
Procurement	288	25,833	\$ 25,833
Initial Spares	90	90	90
Procurement Cost	288	25,923	\$ 25,923

The SIDEWINDER AIM-9L/H is a joint Navy and Air Force short-range, air-to-air, infrared (IR), dogfight missile employed by both fighter and attack aircraft. The all-aspect launch capability is a significant improvement over previous SIDEWINDER versions and greatly increases the firing envelope. The AIM-9M, a product improvement of the AIM-9L, provides for improved counter-countermeasures capability and an improved ability to acquire targets in high IR clutter background. In FY 1988 the procurement of 1,244 guidance units for U.S. forces (288 missiles for Navy and 956 missiles for Air Force) plus approximately 1600 units for FMS customers will be competed between the two mobilization base producers, Ford Aerospace and Raytheon. The FY 1988 procurement of \$25.8 million of 288 missiles completes the requirement.

PHOENIX Missile

(\$ in Thousands)			
	FY 1988	FY 1989	
	Qty	Qty	Amount
Procurement	350	343,596	\$343,596
Initial Spares	628	628	628
Procurement Cost	350	344,224	\$465,499

The PHOENIX missile system is comprised of a long-range airborne weapon control system (AN/AWG-9) with multiple target-handling capabilities and long-range missiles utilizing semi-active mid-course and active terminal guidance. Its mission is to kill multiple air targets with conventional warheads. Six such missiles can be carried aboard the F-14 aircraft. Near simultaneous launch is possible against six targets in an all-weather and heavy-jamming environment. The improved Phoenix missile, the AIM-54C, provides improved lethality, stream raid discrimination, electronic countermeasure (ECM) performance, high and low altitude performance, and improved reliability and maintainability. As a result of these improvements, the missile has greater capability to counter the projected threat aircraft and cruise missile threats. The PHOENIX does not replace any other missile. Competitive procurement of the PHOENIX missile is scheduled to begin in FY 1989 with a request of \$465.3 million for 560 missiles.

AGM/ARM/UCH-84A/B HARPOON Missile

(\$ in Thousands)			
	FY 1988	Qty	FY 1989
	Amount	Amount	Amount
Procurement	124	\$142,660	138
Initial Spares		10,285	6,886
Procurement Cost	124	\$152,945	138
			\$169,709
			\$176,595

The HARPOON is an air-, surface-, and submarine-launched cruise missile which provides an attack capability against targets at sea and on land. It uses an active or passive seeker, radar altimeter, and attitude reference assembly in conjunction with a small digital computer for missile guidance and control. It is propelled by a turbo-jet sustainer engine augmented by a solid booster for ship and submarine launch. The missile has a standard 13.5 inch diameter with a weight of 1,100 pounds for air launch and 1,500 pounds for ship launch. It is compatible with the TARTAR, TERRIER, and ASROC ship launchers as well as with aircraft and submarine launch systems. The missile is planned for use aboard the FF-1052, DDG and DD-963, CG, CGN, PHM, BB, and FFG class ships, the P-3, S-3, A-6, F/A-18, and B-52G aircraft and nuclear attack submarines. The FY 1989 request of \$169.7 million will provide for 138 HARPOON missiles (66 air-launched anti-ship and 72 air-launched Stand-off Land Attack Missiles (SLAM)). These weapons are requested to ensure adequate availability of weapons as new platforms are made operational, and to offset missile expenditures due to training and test requirements.

HARM Missile

(\$ in Thousands)			
	FY 1988	Qty	FY 1989
	Amount	Amount	Amount
Procurement	766	\$187,128	1,307
Initial Spares		10,324	3,587
Procurement Cost	766	\$197,452	1,307
			\$302,749
			\$306,336

The High Speed Anti-Radiation Missile (HARM) is a joint Navy and Air Force air-to-surface missile designed to suppress or destroy land- and sea-based radars supporting enemy air defense systems. HARM is a design evolution of anti-radiation missiles (ARM) such as SHRIKE and STANDARD ARM, and is planned to replace both missiles in the Navy inventory. HARM characteristics include: high speed, large-launch envelope, wide-band-frequency coverage in a single head, high sensitivity and compatibility with various naval aircraft. The HARM has evolved from known and predicted deficiencies in SHRIKE and STANDARD ARM missiles in defeating current and future enemy air defense systems. Initial procurement commenced in FY 1981. The \$302.7 million requested in FY 1989 will procure 1,307 HARM missiles for the Navy. In addition, the Air Force will be procuring 693 missiles in FY 1989, for a total buy of 2,200 missiles.

STANDARD MISSILES (SM-2 MEDIUM RANGE/EXTENDED RANGE)

(\$ in Thousands)			
	FY 1988	FY 1989	
	Qty	Amount	
Procurement	1,310	<u>\$581,098</u>	1,635
Initial Spares		17,434	2,355
Procurement Cost	1,310	<u>\$598,532</u>	1,635
			\$700,468

The STANDARD Missile is a solid-propellant, tail-controlled, surface-to-air and surface-to-surface missile with mid-course and semi-active homing guidance, home-on jamming capability, and proximity and contact fusing. The SM-2 Block II Medium Range (MR) Missile will be deployed on Tartar New Threat Upgrade ships, Aegis CG 47/51 Cruisers, and Aegis DDG-51 Destroyers. The SM-2 Block II Extended Range (ER) Missile will be deployed on Terrier CG and New Threat Upgrade ships. The FY 1988 program introduced competition for the All-Up-Round, with a procurement of 960 SM-2 (MR) Missiles and 350 SM-2 (ER) Missiles. The FY 1989 request of \$698.1 million is for a total procurement of 1,310 SM-2 (MR) Missiles and 325 SM-2 (ER) Missiles.

ROLLING AIRFRAME MISSILE (RAM)

(\$ in Thousands)			
	FY 1988	FY 1989	
	Qty	Amount	
Procurement	240	<u>\$ 44,931</u>	260
Initial Spares		627	988
Procurement Cost	240	<u>\$ 45,558</u>	260
			\$ 53,082

The Rolling Airframe Missile (RAM) is a high-power, low-cost, lightweight, complementary self-defense system to engage anti-ship capable missiles. It will be fired from two launching systems: the NATO SEASPARROW Surface Missile System (NSSMS), of which two cells of the NSSMS system will be modified to hold five (5) RAM rounds each; and a RAM stand-alone Command and Launch System that holds 21 missiles. Components of the missile will be procured competitively between General Dynamics and RAM Systems, a German contractor. The FY 1989 budget request of \$52.1 million will provide for 260 missiles and associated support costs.

MM-92A STINGER Missile

(\$ In Thousands)			
	FY 1988	FY 1989	
	Qty	Amount	Qty
Procurement	425	\$ 17,765	
Initial Spares			
Procurement Cost	425	\$ 17,765	

STINGER is a hand-portable air defense missile system for countering low-altitude, close-range air attack against ships or combat personnel. STINGER uses a passive infrared/ultraviolet homing and guidance system that operates independently after initial aiming and launching. The STINGER system is composed of the missile, launcher, trainers and ancillary equipment. The FY 1988 program of \$17.8 million provides for the final procurement of 425 STINGER Missiles, and associated production and fleet support requirements.

SIDEARM Missile

(\$ In Thousands)			
	FY 1988	FY 1989	
	Qty	Amount	Qty
Procurement	276	\$ 25,381	
Initial Spares			512
Procurement Cost	276	\$ 25,383	

The SIDEARM is a short-range, limited frequency-band, anti-radiation missile being developed to counter point defenses. The Marine Corps plans to primarily use the missile system as a quick reaction, point and shoot weapon from the AH-1 attack helicopter. Future plans are to launch the SIDEARM from SIDEWINDER configured AV-8B, P/A-18, and OV-10D aircraft. No modifications to existing rotary and fixed wing avionics interface are required. The SIDEARM engineering development and procurement concept uses converted AIM-9C guidance and control section (GCS), integrated with components (motor, fuze, warhead, and safe and arm device) from current production AIM-9M SIDEWINDER missiles. Procurement commenced in FY 1986 with an initial production of 200 missiles. The FY 1988 program of \$25.4 million procures 276 missiles. The next planned procurement is FY 1990.

AGM-114A HELLPFIRE Missile

(\$ in Thousands)			
	FY 1988	FY 1989	
	Qty	Amount	
Procurement	1,393	\$ 44,154	
Initial Spares	479	309	
Procurement Cost	1,393	\$ 44,633	200
			\$ 9,267

HELLFIRE, developed by the Army, provides the Marine Corps with an extremely effective anti-armor weapon for use on AH-1T/J helicopters. The \$9.0 million requested in FY 1989 will procure 200 HELLPFIRE missiles. The FY 1989 procurement is required to build up the inventory of HELLPFIRE missiles to satisfy Marine Corps requirements.

PENGUIN Missile

(\$ in Thousands)			
	FY 1988	FY 1989	
	Qty	Amount	
Procurement	3,455	\$ 38,579	
Advance Procurement	3,455	\$ 3,518	
Initial Spares			
Procurement Cost	\$ 3,455	64	\$ 42,097

The PENGUIN missile is an autonomous short-range, air-to-surface weapon which is controlled by an infrared countermeasures-resistant seeker that is automatically activated when the missile reaches a preset range from the predicted position of the target. The missile is planned for use on the LAMPS MK III SH-60B helicopter as an anti-ship weapon. The MK 2 Mod 7 PENGUIN missile is a modification of the surface-launched MK 2 Mod 3 missile. The FY 1988 program of \$3.5 million provides for the advance procurement of long lead time materials in support of the FY 1989 initial procurement of PENGUIN missiles. The \$42.1 million requested in FY 1989 will procure 64 PENGUIN missiles and includes \$3.5 million for advance procurement for FY 1990.

MAVERICK Missiles

	(\$ in Thousands)	
	FY 1988	FY 1989
	<u>Qty</u>	<u>Amount</u>
Procurement	1,725	\$217,300
Initial Spares	292	614
Procurement Cost	1,725	\$217,592
	731	\$ 83,004

The MAVERICK missiles program consists of the two variants employed with Navy and Marine Corps aircraft. These missiles were previously budgeted in separate line items but have been merged for administrative convenience. The LASER MAVERICK (AGM-65E) is a forward-fired, laser-guided missile that can be employed from land or carrier-based aircraft, and will be used mainly on A-4M, AV-8B, F/A-18, and A-6E Marine Corps aircrafts. The primary mission of this missile is close-in support but it will also be employed for interdiction and strike requirements against both land and sea targets. The Imaging Infrared (IIR) MAVERICK (AGM-65P) missile has been developed as a joint service program with the Air Force as executive service. The Navy version of the weapon utilizes an IIR guidance unit optimized for ship tracking, a 307-pound penetrating blast/fragment warhead with cockpit-selectable fuzing, and a reduced-smoke rocket motor. The IIR MAVERICK missile will provide the Navy and Marine Corps with the capability to attack land and sea targets from a more survivable position below and outside of close-in air defense systems. The FY 1989 program of \$82.4 million will procure 731 IIR MAVERICK missiles. (The FY 1988 program will procure 1,300 LASER MAVERICK missiles for \$157.3 million and 425 IIR MAVERICK missiles for \$60.0 million.)

TACIT RAINBOW

	(\$ in Thousands)	
	FY 1988	FY 1989
	<u>Qty</u>	<u>Amount</u>
Procurement	-	-
Initial Spares	-	-
Procurement Cost	-	\$ 89,965

Tacit Rainbow, developed by the Air Force, provides the Navy with a loitering anti-radiation weapon. The missile can be carried and launched without aircraft modifications by any air-wing fixed-wing aircraft. The FY 1989 request of \$90.0 million will provide for the initial procurement of missiles.

Aerial Targets

(\$ in Thousands)

	FY 1988			FY 1989		
	Qty	Amount	Spares	Qty	Amount	Spares
AQM-37C	90	\$20,698	\$ 46	120	\$27,979	\$ 200
BQM-74C	66	15,804	77	200	43,299	789
BQM-34S	34	18,743	-	18,743	-	1,300
Tow Targets	1,800	18,733	454	19,187	1,400	10,290
All Other Targets	29,626	448	30,074	27,113	600	27,713
Total	\$103,604	\$ 1,025	\$104,629	\$109,981	\$ 1,619	\$111,600

Aerial targets provide the representative threats needed to properly evaluate weapons systems and to provide for an effective Fleet Training program. The BQM-74C is a recoverable, subsonic target that is required for both surface-to-air and air-to-air missile and gunnery exercises. The AQM-37C is a non-recoverable, supersonic target, which replicates high altitude, high speed threats. In FY 1989 the AQM-37C and BQM-74C procurements, and the Tow targets procurements and modification program costs \$81.6 million of the total \$110.0 million. The remaining \$28.4 million finances the material costs for the conversion of F-86 aircraft into QF-86 full-scale aerial targets and TALOS missiles into HQM-8X supersonic full-scale targets, and target auxiliary equipment required for target control and augmentation, and BQM-34S support costs.

Drones and Decoys

(\$ in Thousands)

	FY 1988		FY 1989	
	Qty	Amount	Qty	Amount
Procurement Cost		\$ 24,767		\$ 40,744

The current President's Budget separated the Tacit Rainbow into its own line, while the Short Range Remotely Piloted Vehicle program has been transferred to Secretary of Defense management control, although the program will be executed by the Navy. Only the Tactical Air Launched Decoy remains in the current profile.

Analysis of the successful use of small-scale, air-launched decoys has resulted in an emergent requirement for these devices. Tactical decoys have been proven effective against air defenses and will significantly improve the survivability of Navy aircraft. Tactical Air Launched Decoy is a high speed preprogrammed tactical decoy carried from A-6 and A-7 aircraft. It provides passive and active Radar cross-section signature augmentation for use as a force-multiplier. The FY 1989 budget request for \$40.7 million finances the continued procurement of needed decoys.

Other Missile Support

	(\$ in Thousands)		
	FY 1988	Qty	FY 1989
	Amount	Qty	Amount
Procurement	\$ 11,257		\$ 21,313
Initial Spares	1,860		1,118
Procurement Cost	\$ 13,117		\$ 22,431

The Other Missile Support Program provides fleet support material for SUBROC and procures Vertical Launching System (VLS) canisters. SUBROC is an inertially guided anti-submarine warfare missile with a nuclear warhead and is launched from conventional torpedo tubes. VLS is a missile launching system for surface combatants, capable of launching missiles for all warfare areas and adaptable to current and future weapons control systems. The FY 1989 request of \$21.3 million provide fleet support material for SUBROC maintenance, testing, assembly, repair and overhaul, and procures Type I VLS canisters for SH-2 Missiles and Type II VLS canisters for Tomahawk Cruise Missiles.

MODIFICATION OF MISSILES

(\$ in Thousands)

FY 1989 Amended Estimate	-\$ 91,383
FY 1989 Change	-\$ 472
FY 1989 Initial Estimate	-\$ 90,911
FY 1988 Estimate	-\$ 15,513
FY 1987 Actual	-\$ 12,448

The following paragraphs provide justification for the FY 1989 request missile modifications.

FY 1989 Modification Program
(\$ in Thousands)

Air-Launched Missiles	Surface-Launched Missiles
SIDEWINDER 2,409	STANDARD MISSILES \$27,610
PHOENIX 198	TOMAHAWK 7,216
HARPOON * 9,602	SPARROW * \$44,348
TOTAL \$12,209	TOTAL \$79,174

* SPARROW and HARPOON can both be air and surface launched.

The FY 1989 funds required for the air-launched missile modification programs are budgeted at \$12.2 million and continue required modifications for SIDEWINDER, PHOENIX and HARPOON missiles.

The FY 1989 STANDARD missile modification program, budgeted at \$27.6 million, continues the required modifications of STANDARD MR and ER rocket motors and sustainer sections.

The FY 1989 TOMAHAWK missile modification program is budgeted at \$7.2 million to continue the improved guidance set flight computer modification and initiate signal certification device modification.

The FY 1989 SPARROW missile modification program, budgeted a \$44.3 million, initiates the RIM low altitude fuze retrofit program (sea version only).

SUPPORT EQUIPMENT AND FACILITIES:

(\$ in Thousands)

	FY 1989	Amended Estimate	-	\$ 558,654
FY 1989 Change	-	-	\$ -198,778	
FY 1989 Initial Estimate	-	-	\$ 757,432	
FY 1988 Estimate	-	-	\$ 370,843	
FY 1987 Actual	-	-	\$ 148,643	

The following paragraphs provide justification for the FY 1989 request for support equipment and facilities. This group includes the Weapons Industrial Facilities, the Defense Meteorological Satellite, and the Fleet Satellite Communications programs.

Weapons Industrial Facilities

(\$ in Thousands)

	FY 1988	Amount	FY 1989	Amount
Procurement Costs	Qty	\$ 9,216	Qty	\$ 10,750

The FY 1989 request of \$10.8 million provides for missile and other ordnance producing industrial facilities include funds for capital maintenance, emergency repairs, fire protection improvements, and energy conservation. These funds provide for nonrecurring capital maintenance at government-owned missile and weapon producing industrial plants as well as emergency repairs and improvements designed to reduce fire and other safety hazards.

Fleet Satellite Communications

(\$ in Thousands)			
	FY 1988	FY 1989	
QTY	Amount	QTY	Amount
Procurement	\$123,858		\$ 97,622
Advance Procurement			77,000
Procurement Cost	\$123,858		\$174,622

The Fleet Satellite Communications (FLTSATCOM) system satisfies the Navy's urgent worldwide Ultra High Frequency (UHF) mobile user communication requirements. This includes protected fleet broadcast service to all Navy ships plus a vital command control service to all Anti-Submarine Warfare (ASW) platforms, Fleet Ballistic Missile (FBM) submarines, aircraft carriers, cruisers and other selected aircraft, ships and submarines. The system also satisfies the Air Force equatorial satellite communication requirements including presidential airborne command posts, Strategic Air Command and emergency mission support communications. A constellation of channelized satellites, placed in geosynchronous orbits, is used to meet Navy and Air Force UHF communications requirements. UHF follow-on satellites will replace the existing constellation at the end of its expected operational lifetime beginning in the early 1990's.

The PY 1988 program of \$123.9 million provides for production engineering efforts, full funding of non-recurring production start-up costs associated with procurement of the first UHF follow-on satellite, and the initial increment of recurring costs for that first satellite: The FY 1989 request provides for continued engineering support efforts and for all remaining recurring costs required to complete procurement of the spacecraft authorized in FY 1988. Additionally, the advance procurement funds requested in PY 1989 provide for the first purchase of economic order quantity procurement under a five year multi-year contract commencing in FY 1989 for the remaining eight UHF follow-on satellites.

Defense Meteorological Satellite

	(\$ in Thousands)			
	FY 1988	Qty	FY 1989	
Procurement Costs	Qty	Amount	Qty	Amount
		\$ 19,333		\$ 21,575

The Defense Meteorological Satellite program funds the Navy's procurement of Microwave Imagers. The imager has been developed and previously procured under a joint Navy/Air Force program. The imager is a new sensor tailored for operation onboard a new series of spacecraft that will fulfill Navy data requirements for surface wind speed, precipitation intensity and identification of ice edge, ice coverage and ice age in polar areas. The FY 1988 program of \$19.3 million and the FY 1989 request of \$21.6 million will fund procurement of two imagers in each year for the Navy.

Ordnance Support Equipment

	(\$ in Thousands)			
	FY 1988	Qty	FY 1989	
Procurement Costs	Qty	Amount	Qty	Amount
		\$218,436		\$351,707

Detail justification is provided separately.

BUDGET ACTIVITY 3: TORPEDOES AND RELATED EQUIPMENT

(\$ in Thousands)

PY 1989	Amended Estimate	- \$ 699,054
PY 1989 Change		- \$-271,287
PY 1989 Initial Estimate		- \$ 970,341
PY 1988 Estimate		- \$ 489,039
PY 1987 Actual		- \$ 571,178

Purpose and Scope of Work

These funds provide for the procurement of anti-submarine and anti-ship weapons such as torpedoes, mines and underwater targets, torpedo and mine modifications, and associated support equipment items related to production, as well as acquisition of other equipment and support necessary to maintain fleet readiness.

TORPEDOES AND TARGETS:

(\$ in Thousands)

PY 1989	Amended Estimate	- \$ 647,113
PY 1989 Change		- \$-257,579
PY 1989 Initial Estimate		- \$ 904,692
PY 1988 Estimate		- \$ 392,863
PY 1987 Actual		- \$ 425,322

The following paragraphs provide justification for the FY 1989 Torpedoes and Related Equipment request.

MK-48 Torpedo Advanced Capability (ADCAP)

	(\$ in Thousands)		
	FY 1988	Qty	FY 1989
	Qty	Amount	Qty
Procurement	100	\$243,444	261
Initial Spares		12,667	12,000
Procurement Cost	100	\$255,711	261
			\$443,014

The MK-48 ADCAP (Advanced Capability) torpedo was developed as an improvement to the MK-48 torpedo to counter enemy submarine threats through the 1990's. The improvements in the guidance and control systems will allow the ADCAP torpedo to operate against the current threat targets. Improvements in the propulsion system will allow the torpedo to go faster, deeper and farther than the current MK-48 torpedo. These improvements will allow the ADCAP torpedo to operate in several adverse environments. The FY 1989 program procures 261 ADCAP torpedoes, production support and ancillary equipment.

MK-50 Advanced Lightweight Torpedo (ALWT)

	(\$ in Thousands)		
	FY 1988	Qty	FY 1989
	Qty	Amount	Qty
Procurement	16	\$108,402	140
Initial Spares		420	
Procurement Cost	16	\$108,822	140
			\$198,547

The MK-50 Advanced Lightweight Torpedo (ALWT) is the successor to the MK-46 lightweight torpedo. The MK-50 is an acoustic homing torpedo, which can be employed from either fixed-wing anti-submarine warfare (ASW) aircraft, ASW helicopters, surface ships equipped with either torpedo tubes or Vertical Launched ASROC, and submarines equipped with SEA LANCE. The FY 1988 program for \$108.4 million procures 16 torpedoes as low rate initial production for the second source, Westinghouse. The follow-on procurement in FY 1989 for 140 torpedoes at a total of \$198.5 million provides a directed dual source procurement at low rates. The two producers are Honeywell and Westinghouse.

MK-30 Mobile Target

(\$ in Thousands)			
	FY 1988	FY 1989	
Qty	Amount	Qty	Amount
Procurement	12	\$ 31,495	
Initial Spares			
Procurement Cost	12	\$ 31,495	

The MK-30 Mobile Target provides air, surface and submarine ASW units with the means to conduct realistic exercise firings on three-dimensional underwater ranges. This target provides the basic training capability to exercise surface ship and submarine sonars, actively and passively fired torpedoes, and aircraft equipped with sonobuoys and Magnetic Anomaly Detection (MAD) gear. The FY 1988 procurement continues the build up of assets to support achievement of 2,400 MK-30 in-water runs per at four underwater sites.

ASROC Component Replacement

(\$ in Thousands)			
	FY 1988	FY 1989	
Qty	Amount	Qty	Amount
Procurement Cost		\$ 9,522	

The Anti-Submarine-Rocket (ASROC) is a weapon system designed around a range-controlled, unguided rocket missile which carries a torpedo or a depth charge as a payload. ASROC is utilized by most surface combatants to defend against high performance enemy submarines. The FY 1988 request provide for procurement for ASROC components to replace those that were expended during fleet training exercises. The principal element of cost in FY 1988 is the continued procurement of rocket motor and Ignition Separation Assemblies (MK-4 ISA). The ISAs are being procured in a new design which makes them safe from the hazards of accidental detonation caused by shipboard electromagnetic equipment (designated HERO: Hazards of Electromagnetic Radiation to Ordnance). Procurement of the HERO-safe MK-4 ISA is required in order to replenish inventories of the older non-HERO safe MK-3 ISAs depleted by training losses and will eventually replace the entire inventory of the older components. FY 1988 is the final procurement.

Vertical Launch ASROC (VLA)

	(\$ in Thousands)	
	<u>FY 1988</u>	<u>FY 1989</u>
<u>Qty</u>	<u>Amount</u>	<u>Qty</u>
Procurement		
Initial Spares		
Procurement Cost	\$ 17,552	

Vertical Launch ASROC (VLA) is a replacement system for the older ASROC weapon system. It will provide a vertically launched weapon to a greater distance with equal accuracy utilizing the latest torpedo/depth charge configuration. The FY 1989 request provides for long lead material and second source qualification effort.

MODIFICATION OF TORPEDOES AND RELATED EQUIPMENT:

(\$ in Thousands)

FY 1989 Amended Estimate	\$ 3,289
FY 1989 Change	- \$ -12,258
FY 1989 Initial Estimate	\$ 15,547
FY 1988 Estimate	- \$ 42,190
FY 1987 Actual	- \$ 97,685

The following paragraphs provide justification for the FY 1989 request for torpedo modifications and related equipment.

MK-67 Submarine Launched Mobile Mine (SLMM)

	(\$ in Thousands)	
	<u>FY 1988</u>	<u>FY 1989</u>
<u>Qty</u>	<u>Amount</u>	<u>Qty</u>
Procurement		
Initial Spares	\$ 2,858	
Procurement Cost	\$ 1,436	
	\$ 4,294	
		\$ 1,332
		\$ 1,332

The MK-67 Submarine Launched Mobile Mine (SLMM) is an influence-actuated, shallow water bottom mine. Its principal mission is to covertly mine enemy harbors, port entrances and strategic choke points. The FY 1989 procurement completes this program.

CAPTOR Mod-0

(\$ in Thousands)			
	FY 1988	FY 1989	
	<u>Qty</u>	<u>Amount</u>	<u>Qty</u>
Procurement		\$ 38,000	
Initial Spares		\$ 38,000	
Procurement Cost		\$ 38,000	

The FY 1988 program for \$38 million procures modifications for MK-60 CAPTOR Mod-0 mines currently in the fleet. The FY 1988 procurement completes the modifications, which will update the older mines to the latest approved production baseline configuration.

Swimmer Weapon System

(\$ in Thousands)			
	FY 1988	FY 1989	
	<u>Qty</u>	<u>Amount</u>	<u>Qty</u>
Procurement		\$ 1,332	
Initial Spares		62	
Procurement Cost		\$ 1,394	

This program procures unique weapons and equipment required by the Navy Special Warfare Groups One and Two (SEAL teams) to carry out beach clearance, underwater and direct action missions. Currently, there are eight SEAL teams deployed within the Fleet.

SUPPORT EQUIPMENT:

(\$ in Thousands)

FY 1989 Amended Estimate	\$ 48,652
FY 1989 Change	- \$ 1,450
FY 1989 Initial Estimate	\$ 50,102
FY 1988 Estimate	\$ 53,986
FY 1987 Actual	- \$ 48,171

The following paragraphs provide justification for the FY 1989 request for torpedo support equipment.

Torpedo Support Equipment

Procurement Cost	(\$ in Thousands)	
	FY 1988 Qty	FY 1988 Amount \$ 33,348

The program procures components necessary to restore weapons used to conduct fleet training exercises (which involves actually firing of torpedoes) back to a ready-for-issue warshot status. This request supports combat-ready deployment of anti-submarine warfare forces. The funds requested procure such expended components as batteries, pressure cylinders, propellant assemblies and various air-launch accessories; equipment and components worn out or lost during repeated service such as exercise heads and fuel tanks; and production support efforts associated with the above procurements. Procurement quantities of these items vary each year and are dependent upon fleet training requirements and the tempo of operations. The FY 1989 resources procure the material required to support fleet training exercises and operational inventories for the MK-46, MK-48/MK-48 ADCAP torpedoes and exercise turnaround kits for the MK-50 Advanced Lightweight Torpedoes.

ASV Range Support

(\$ in Thousands)			
	<u>FY 1988</u>	<u>Qty</u>	<u>Amount</u>
		<u>FY 1989</u>	<u>Amount</u>
Procurement		20,638	22,664
Initial Spares		742	780
Procurement Cost		21,380	23,444

The Anti-Submarine Warfare Range Support program provides for the procurement of range proofing and fleet support equipment required for use on the Navy's underwater ranges and for the fixed costs of on-range proofing services. This includes the procurement of pingers, transponders, MK-30 and MK-27 target exercise components and other related items. This program supports fleet exercises and torpedo firings and provides equipment to maintain ASV readiness.

BUDGET ACTIVITY 4: OTHER WEAPONS

(\$ in Thousands)

FY 1989	Amended Estimate	\$ 108,440
FY 1989	Change	- \$ +4,771
FY 1989	Initial Estimate	- \$ 103,669
FY 1988	Estimate	- \$ 100,339
FY 1987	Actual	- \$ 175,545

Purpose and Scope of Work

Funds budgeted under this activity finance the procurement of guns and gun mounts for Navy and Coast Guard ships, as well as modifications and support equipment.

Justification of Funds

The following paragraphs provide justification for the FY 1989 request for guns and gun mounts. Initial spare parts amounts are included for information under each missile but are budgeted separately in the spares and repair parts category of the Budget Activity 5 justification.

MK-15 Close-In-Weapon System (CIWS)

	(\$ in Thousands)	
	FY 1988 Qty	FY 1989 Amount
Procurement	5	\$ 28,023
Initial Spares		1,625
Procurement Cost	5	\$ 29,648
		\$ 21,617

The MK-15 Close-in-Weapon System (CIWS), as known as Phalanx, is a fast reaction, terminal defense against low flying aircraft and anti-ship missiles penetrating other fleet defensive systems. The system is an automatic, self-contained unit consisting of search and track radar, a digital fire control system and a 20mm M61A1 gun which automatically detects, evaluates, tracks, engages, assesses kill and returns to search mode. The system will be installed in over 300 ships, both new construction and retrofit. The request of \$19.4 million in FY 1989 procures 5 retrofit systems. This system is competitively procured from General Dynamics and General Electric. Sufficient quantities are budgeted in Weapons Procurement, Navy (WPN) and Shipbuilding and Construction, Navy (SCN), to maintain economic production rates at both facilities.

25mm Gun Systems

(\$ in Thousands)			
	FY 1988	FY 1989	
	Qty	Amount	Qty
Procurement	22	\$ 4,091	57
Initial Spares		1,675	
Procurement Cost	22	\$ 5,766	57
			\$ 10,396

The MK-38 25mm gun system is a single barrel, 2 in M242 automatic gun mounted on a manually operated MK-88 deck mount, and is the planned replacement weapon for the M-16 20mm machine gun. The MK-38 system serves as a short range defensive and offensive armament for ships and small craft. The FY 1989 request of \$9.4 million procures 57 systems.

Small Arms and Weapons

(\$ in Thousands)			
	FY 1988	FY 1989	
	Qty	Amount	Qty
Procurement		\$ 9,568	
Initial Spares			
Procurement Cost		\$ 9,568	
			\$ 9,811

This program procures a wide variety of small arms and weapons, including rifles, 9mm pistols, shotguns, 50 caliber machine guns, and 7.62mm machine guns. Also, \$1.5 million in FY 1988 and \$1.0 million in FY 1989 are included for special operations requirements. These small arms support security training, over 2,600 ship and shore activities, mobile construction battalion units, special warfare units, and crisis response teams throughout the Navy.

MK-15 Close-In-Weapon System (CIWS) Modifications

	(\$ in Thousands)		
	FY 1988	Qty	FY 1989
Procurement Cost	Amount \$ 45,186	Qty \$ 54,557	

The MK-15 Close-In-Weapon System (CIWS) modifications requested in FY 1989 for \$54.6 million are required to increase magazine capacity, increase search elevation angle, and provide various other improvements, such as reliability and maintainability. Improvements are backfit into MK-15 CIWS systems procured prior to FY 1985, as well as trainers. As noted above, this system is competitively procured from General Dynamics and General Electric.

5"/54 Gun Mount Modifications

	(\$ in Thousands)		
	FY 1988	Qty	FY 1989
Procurement Cost	Amount \$ 6,414	Qty 2,419	
Initial Spares			\$ 2,597
Procurement Cost			\$ 11,041
\$ 8,833			

This program procures hardware to improve the operability, reliability, maintainability and availability of all in-service 5 inch/54 caliber gun mounts.

3"/50 Gun Mount Modifications

	(\$ in Thousands)		
	FY 1988	Qty	FY 1989
Procurement Cost	Amount \$ 275	Qty \$ 260	

This program procures hardware to improve the operability, reliability, maintainability and availability of all in-service 3 inch/50 caliber gun mounts.

MK-75 76mm Gun Mount Modifications

(\$ in Thousands)			
	FY 1988	FY 1989	
	<u>Qty</u>	<u>Amount</u>	<u>Qty</u>
Procurement Cost	\$ 4,060	\$ 4,097	
Initial Spares	343	444	
Procurement Cost	\$ 4,403	\$ 4,541	

This program procures hardware to improve the safety, operability, reliability, maintainability, survivability and shock and vibration capabilities for all in-service MK-75 76mm gun mounts.

Modifications Under \$2 Million

(\$ in Thousands)			
	FY 1988	FY 1989	
	<u>Qty</u>	<u>Amount</u>	<u>Qty</u>
Procurement Cost	\$ 1,654	\$ 1,618	

This program procures hardware to improve the safety, operability, reliability, maintainability and availability of all in-service 16 inch/50 caliber and 5 inch/38 caliber gun mounts.

SUPPORT EQUIPMENT:

(\$ in Thousands)

	FY 1989 Amended Estimate	\$ 838
FY 1989 Change	-	\$ +4
FY 1989 Initial Estimate	-	\$ 834
FY 1988 Estimate	-	\$ 1,068
FY 1987 Actual	-	\$ 844

The following paragraph provides justification for the FY 1989 request for gun support equipment.

Gun Support Equipment

	(\$ in Thousands)		
	FY 1988	FY 1989	
Qty	Amount	Qty	Amount
Procurement Cost	\$ 1,068	\$ 838	

This program procures match grade small arms, saluting mounts, and training aids for special warfare units and industrial personnel.

BUDGET ACTIVITY 5: SPARE AND REPAIR PARTS

(\$ in Thousands)

FY 1989 Amended Estimate	\$ 87,412
FY 1989 Change	\$ -56,320
FY 1989 Initial Estimate	\$ 143,732
FY 1988 Estimate	\$ 110,928
FY 1987 Actual	\$ 138,172

Purpose and Scope of Work

Funds budgeted under this activity finance the procurement of spare and repair parts for Weapons Procurement, Navy (YPN) weapons systems. These spare parts are required to maintain the weapon system prior to the Material Support Date (MSD) where sparing is provided through the Navy Supply System.

Justification of Funds

The following paragraphs provide justification for the FY 1989 request for initial and replenishment spares. Initial and replenishment spare parts amounts were included for information under each weapon system but are budgeted separately in Budget Activity 5.

Initial Spares

	(\$ in Thousands)	
	FY 1988 Qty	FY 1989 Amount
Procurement Cost	\$ 94,187	\$ 69,385

These funds provide initial spare and repair parts for missile, torpedo and weapon systems procured in this appropriation. Requirements are determined by detailed provisioning procedures that include a wide range of factors about end item usage, usage rate trends, engineering judgment and repairable item turnaround time.

Replenishment Spares

	(\$ in Thousands)			
	FY 1988 Qty	Amount	FY 1989 Qty	Amount
Procurement Cost		\$ 16,741		\$ 18,027

These funds provide replenishment spare and repair parts for missile, torpedo and weapon systems procured in this appropriation. Requirements are determined by stratification techniques which include the number of end items in the fleet, repair usage data, Ready-for-Issue (RFI) spares returning from rework/repair programs and equipment lead times.

**Comparison of PY 1988 Program Requirements as Reflected
In PY 1988/1989 Budget With PY 1988 Program Requirements as
Shown in Amended PY 1988/1989 Budget**

Summary of Requirements (In Thousands of Dollars)

	Total Program Requirement Per FY 1989 Budget	Program Requirements Per FY 1989 Budget	Increase (+) or Decrease (-)
Ballistic Missiles	2,258,692	2,048,692	-210,000
Other Missiles	3,377,987	3,085,621	-292,366
Torpedoes and Related Equipment	634,385	489,039	-145,346
Other Weapons	101,540	100,339	-1,201
Spares and Repair Parts	129,728	110,928	-18,800
Reimbursable Program	31,930	63,230	+31,300
Total Fiscal Year Program	6,534,262	5,897,849	-636,413

Explanation by Budget Activity

1. Ballistic Missiles (\$-210,000)

The net decrease results from a specific Congressional reduction (\$-210,000) against Trident II.

2. Other Missiles (\$-292,366)

The net decrease results from specified Congressional reductions (\$-176,066) and a DD 1415 reprogramming action for unfunded O&M Navy requirements (\$-116,300).

Explanation by Budget Activity

3. Torpedoes and Related Equipment (\$-145,346)

The net decrease is the result of specified Congressional reductions (\$-145,346).

4. Other Weapons (\$-1,201)

The net decrease is the result of specified Congressional reductions (\$-1,201).

5. Spare and Repair Parts (\$-18,800)

The net decrease is the result of specified Congressional reductions (\$-2,700) and a DD 1415 reprogramming action to support Guam Section 6 Schools (\$-400) and Champus requirements (\$-15,700).

**Comparison of FY 1988 Financing As Reflected
In FY 1988/1989 Budget With FY 1988 Financing As
Shown in Amended FY 1988/1989 Budget**
(In Thousands of Dollars)

	Financing Per FY 1988 Budget	Financing Per FY 1989 Budget	Increase (+) or Decrease (-)
Program Requirements (Total)			
Program Requirements (Service Account)	6,534,262	5,897,849	-636,413
Program Requirements (Reimbursable)	6,502,332	5,834,619	-667,713
Less:			
Anticipated Reimbursements	31,930	63,230	+31,300
Appropriation	6,502,322	5,967,019	-535,313
Transferred to other accounts	-	-132,400	-132,400
Appropriation (Adjusted)	6,502,332	5,834,619	-667,713

Explanation of Changes in Financing

1. Program Requirements (TOTAL)

The decrease reflects the decrease in the service account requirements and an increase (+\$31,300) to the reimbursable program.

2. Program Requirements (Service Account)

The decrease reflects Congressional reductions (\$535,313) and inter-appropriation transfers (-\$132,400).

3. Program Requirements (Reimbursable)

The increase reflects an adjustment to the reimbursable account to cover projected Rolling Airframe Missile (RAM) Foreign Military Sales (FMS).

4. Anticipated Rebursements

As above.

5. Appropriation

The FY 1988 DOD Appropriations Act reduced the FY 1988 President's Budget request by \$535,313.

6. Transferred to Other Accounts

The decrease reflects proposed DD 1415 reprogramming (-\$132,400) to OGM,N as follows: Campus medical costs (-\$116,300), (-\$15,700) Campus administration costs and (-\$400) Support Guam Schools Section 6.

**Comparison of FY 1987 Program Requirements as Reflected
In FY 1988/1989 Budget With FY 1987 Program Requirements as
Shown in Amended FY 1988/89 Budget**

Summary of Requirements (In Thousands of Dollars)

	Total Program Requirements Per FY 1988/1989 Budget	Program Requirements Per Amended FY 1988/89 Budget	Increase (+) or Decrease (-)
Ballistic Missiles	1,359,073	1,354,573	-4,500
Other Missiles	2,968,006	2,730,160	-237,846
Torpedoes and Related Equipment	606,270	571,178	-35,092
Other Weapons	186,721	174,221	-12,500
Spares and Repair Parts	145,777	138,172	-7,605
Reimbursable Programs	31,000	30,444	-556
Total Fiscal Year Program	\$ 296,847	4,998,748	-298,099

Explanation by Budget Activity

1. Ballistic Missiles (\$-4,500)

The decrease results from a DD 1415 reprogramming action for Military Personnel, Navy (\$-4,500).

2. Other Missiles (\$-237,846)

The decrease results from Congressional recissions to the Laser Maverick (\$-153,000), Tomahawk (\$-20,000), Sidewinder (\$-3,700), and HARM (\$-3,000) programs; DD 1415 reprogrammings to Military Personnel, Navy (\$-15,500), Aircraft Procurement, Air Force (\$-2,500), O&M Defense Agencies (\$-4,400) and Missile Procurement, Air Force for Space Launch Recovery (\$-37,200); offset by minor reprogrammings (\$+1,454).

3. Torpedoes and Related Equipment (\$-35,092)

The decrease results from Congressional rescissions to the VLA program (\$-32,100), DD 1415 reprogramming to Military Personnel, Navy (\$-2,500), and minor reprogramming (\$-492).

4. Other Weapons (\$-12,500)

The decrease results from the Congressional rescission to the CIWS program (\$-11,300), DD 1415 reprogramming to Military Personnel, Navy (\$-1,000), offset by minor reprogrammings (\$-200).

5. Spares and Repair Parts (\$-7,605)

The decrease results from the Congressional rescissions to the spare program (\$-4,700) DD 1415 reprogramming to Military Personnel, Navy (\$-2,143), and minor reprogrammings (\$-762).

**Comparison of FY 1987 Financing As Reflected
In FY 1988/89 Budget With FY 1987 Financing As
Shown in Amended FY 1988/89 Budget**

(In Thousands of Dollars)

	Financing Per FY 1988/1989 Budget	Financing Per Amended FY 1989 Budget	Increase (+) or Decrease (-)
Program Requirements (Total)	5,296,847	4,998,748	-298,099
Program Requirements (Service Account)	5,265,847	4,968,304	-297,543
Program Requirements (Reimbursable)	31,000	30,444	-556
Less:			
Anticipated Reimbursements	31,000	30,444	-556
Add:			
Unobligated balance available to finance subsequent year budget plans		267,500	267,500
Budget Activity	5,265,847	5,235,804	-30,043
Appropriation	5,290,847	5,290,847	-0-
Transferred to other accounts	-25,000	-55,043	+30,043
Appropriation (adjusted)	5,265,847	5,235,804	-30,043

Explanation of Changes in Financing

1. Program Requirements (TOTAL)

The decrease is the total of the decrease in the service account requirements and the decrease in the reimbursable account.

2. Program Requirements (Service Account)

The decrease reflects Congressional rescissions of \$227,800, and DD 1415 reprogramming to Military Personnel, Navy (-\$25,643), Aircraft Procurement, Air Force (-\$2,500), Operation and Maintenance Defense Agencies, (-\$4,400) and Missile Procurement, Air Force (-\$37,200).

3. Program Requirements (Reimbursable)

The decrease reflects actual reimbursable orders received.

4. Anticipated Reimbursements

Same as above.

5. Unobligated Balance Available to Finance Subsequent Year Budget Plans

The increase represents balances set aside to fund prior year Congressional rescissions and amounts proposed for intra-appropriation transfer.

6. Budget Authority

The decrease represents approved Congressional reprogramming actions.

7. Transferred to Other Accounts

The increased transfers reflect approved DD 1415 reprogramming to Military Personnel, Navy (-\$25,643) and Operation and Maintenance, Defense Agencies (-\$4,400).

8. Appropriation Adjusted

Same as above.